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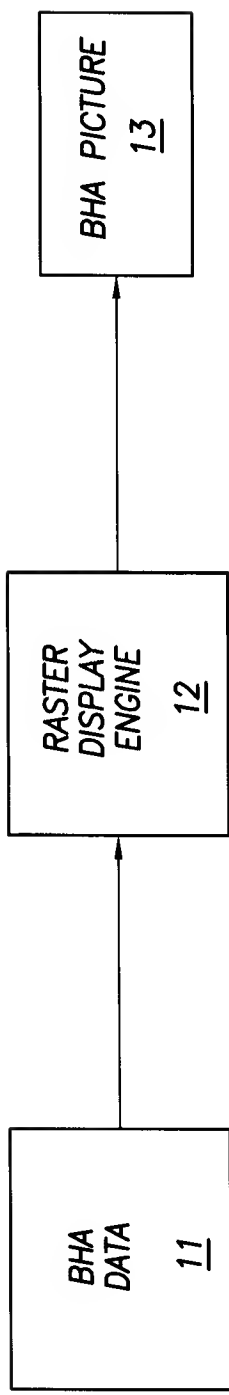


FIG.1  
(PRIOR ART)

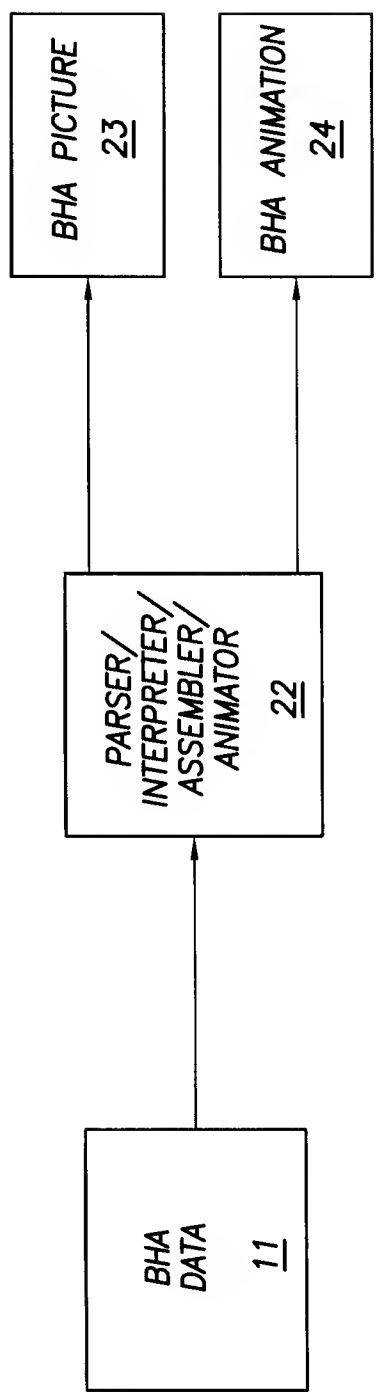


FIG.2

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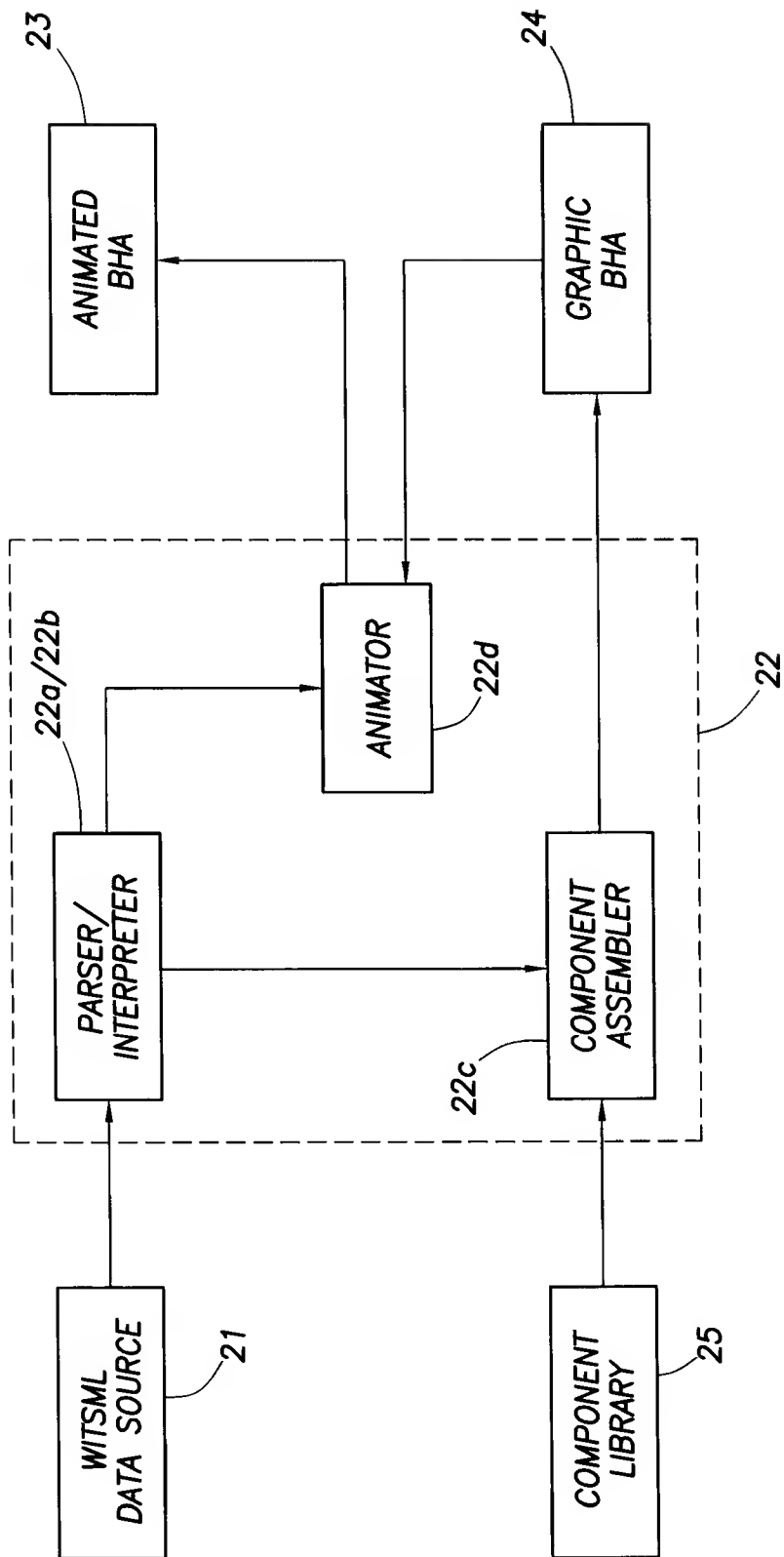
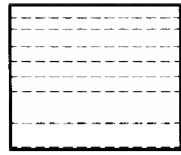


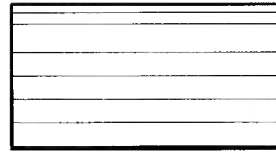
FIG. 3

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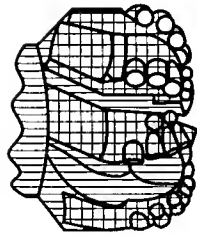
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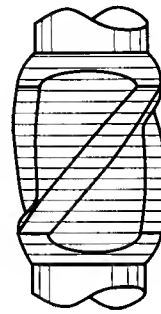
**FIG. 4A**



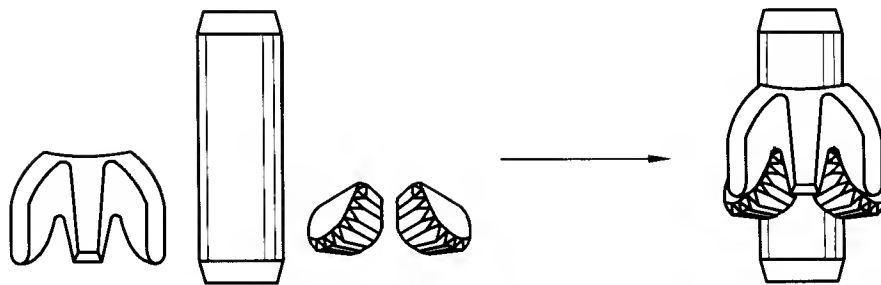
**FIG. 4B**



**FIG. 4C**



**FIG. 4D**



**FIG. 5**

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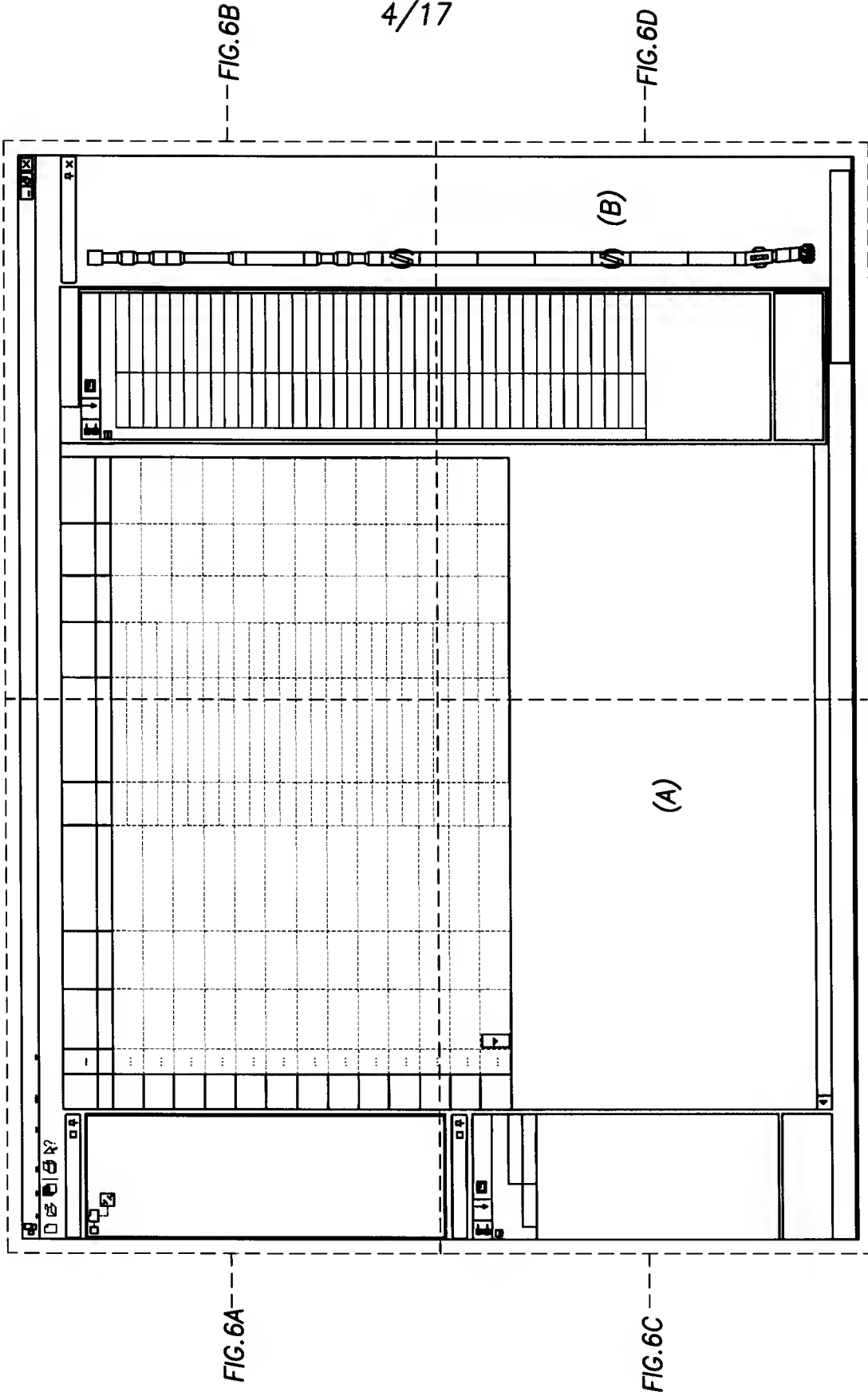


FIG. 6

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FIG. 6A

File

Edit

Format

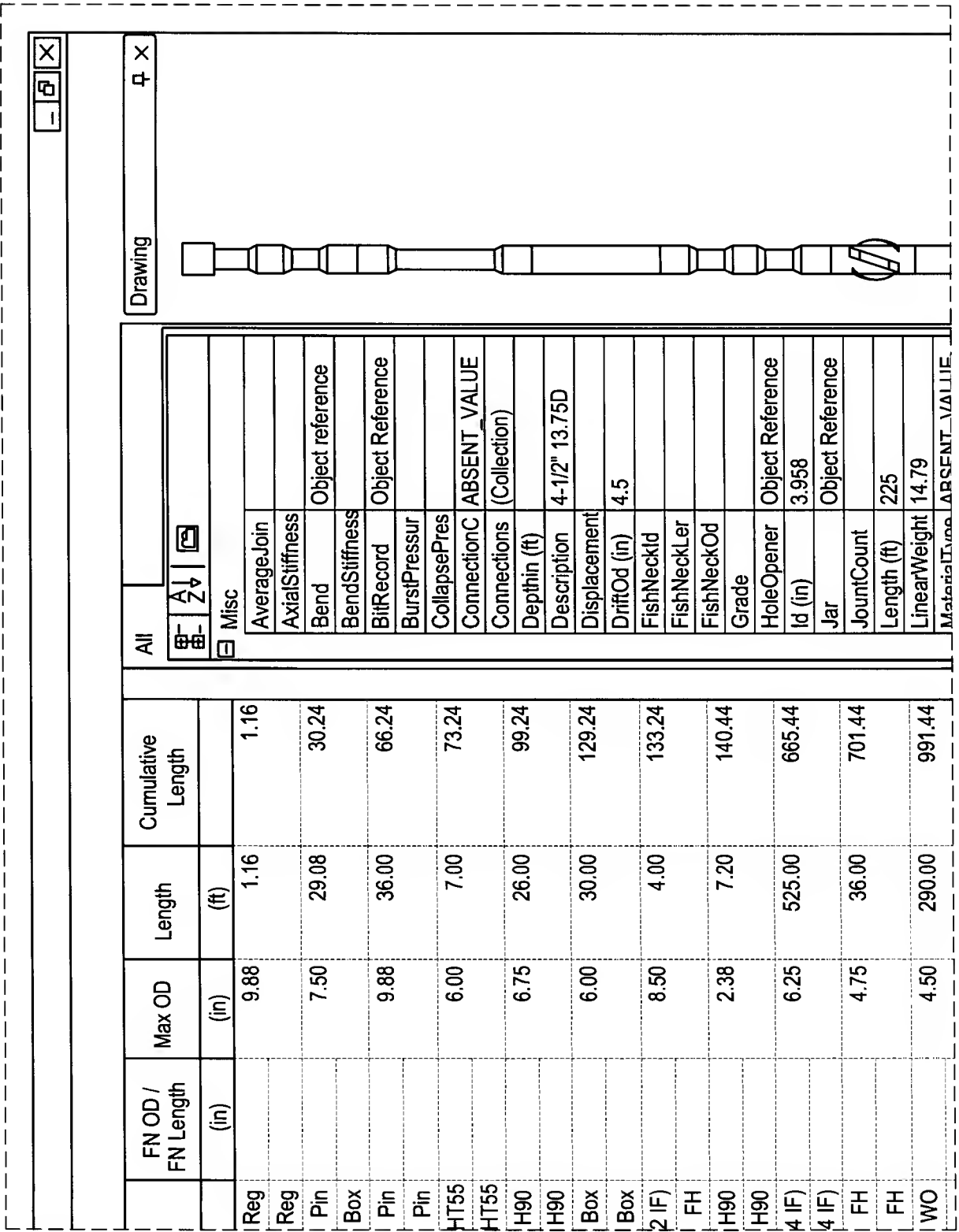
View

Window

Help

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FIG. 6B



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BHA Properties

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[+]

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A

Z

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[-]

[+]

Misc

FolderLocC:\temp\bha2.x

ParentTreeNode: C:\te

FolderLocation

Ready

12	...	Heavyweigh DrillPipe	Non-Magnetic Heavy Weight Drill Pipe	3.96	NC46
13	...			4.50	NC46
				2.75	NC46

4

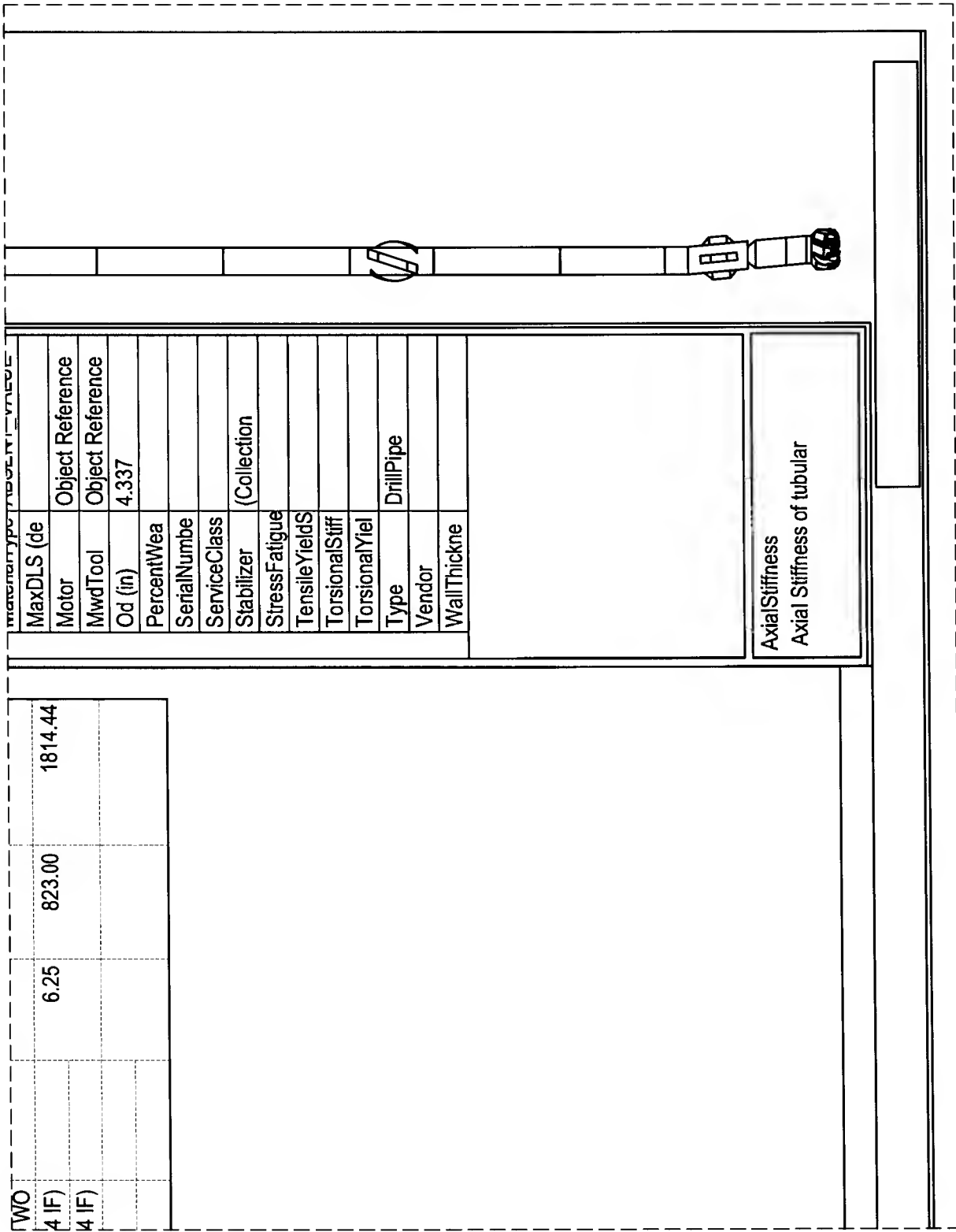
FIG. 6C

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FIG. 6D

TWO				
4 IF)		6.25	823.00	1814.44
4 IF)				

MaxDLS (de	
Motor	Object Reference
MwdTool	Object Reference
Od (in)	4.337
PercentWea	
SerialNumbe	
ServiceClass	
Stabilizer	(Collection
StressFatigue	
TensileYieldS	
TorsionalStiff	
TorsionalYiel	
Type	DrillPipe
Vendor	
WallThickne	
AxialStiffness Axial Stiffness of tubular	





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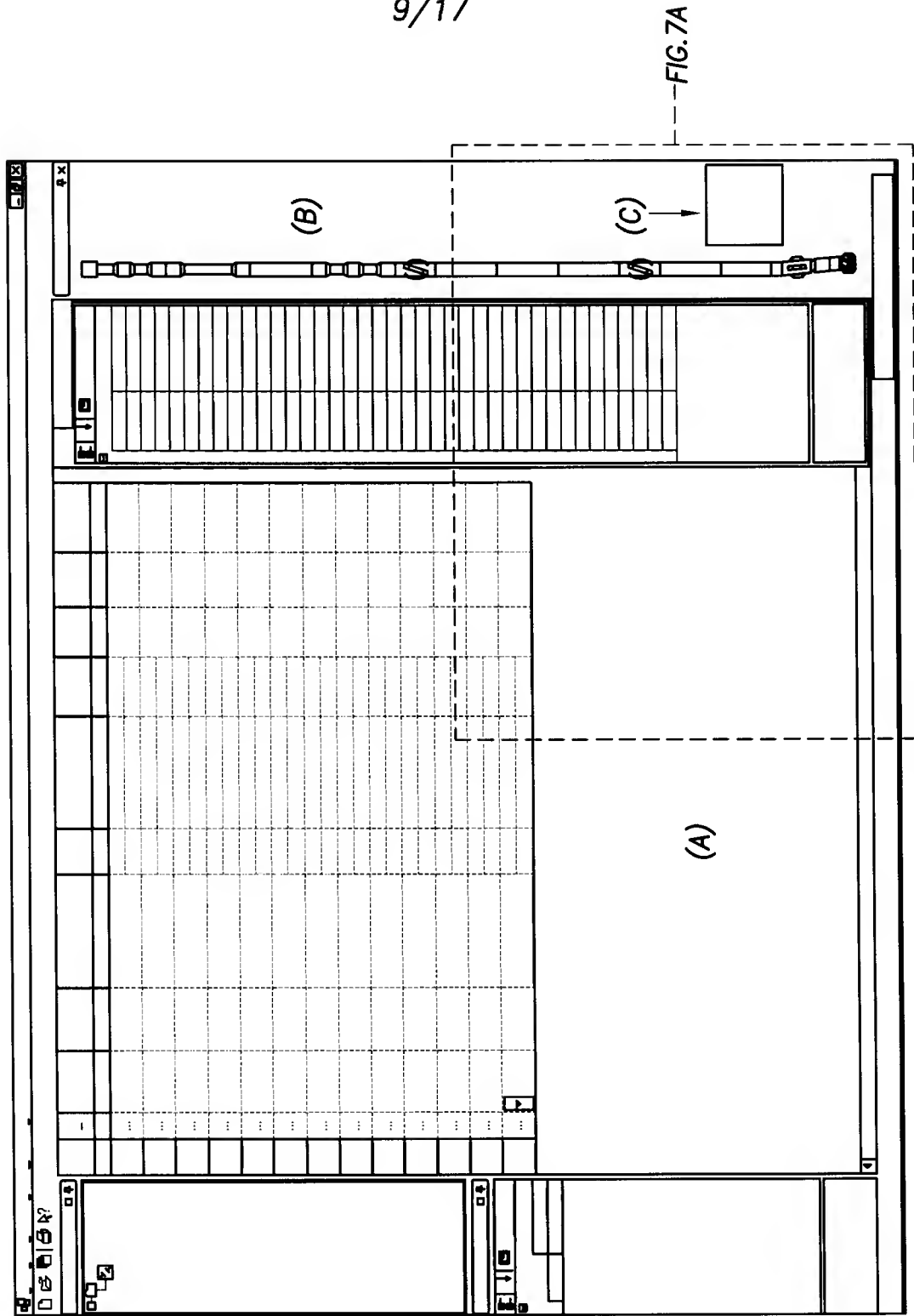


FIG. 7

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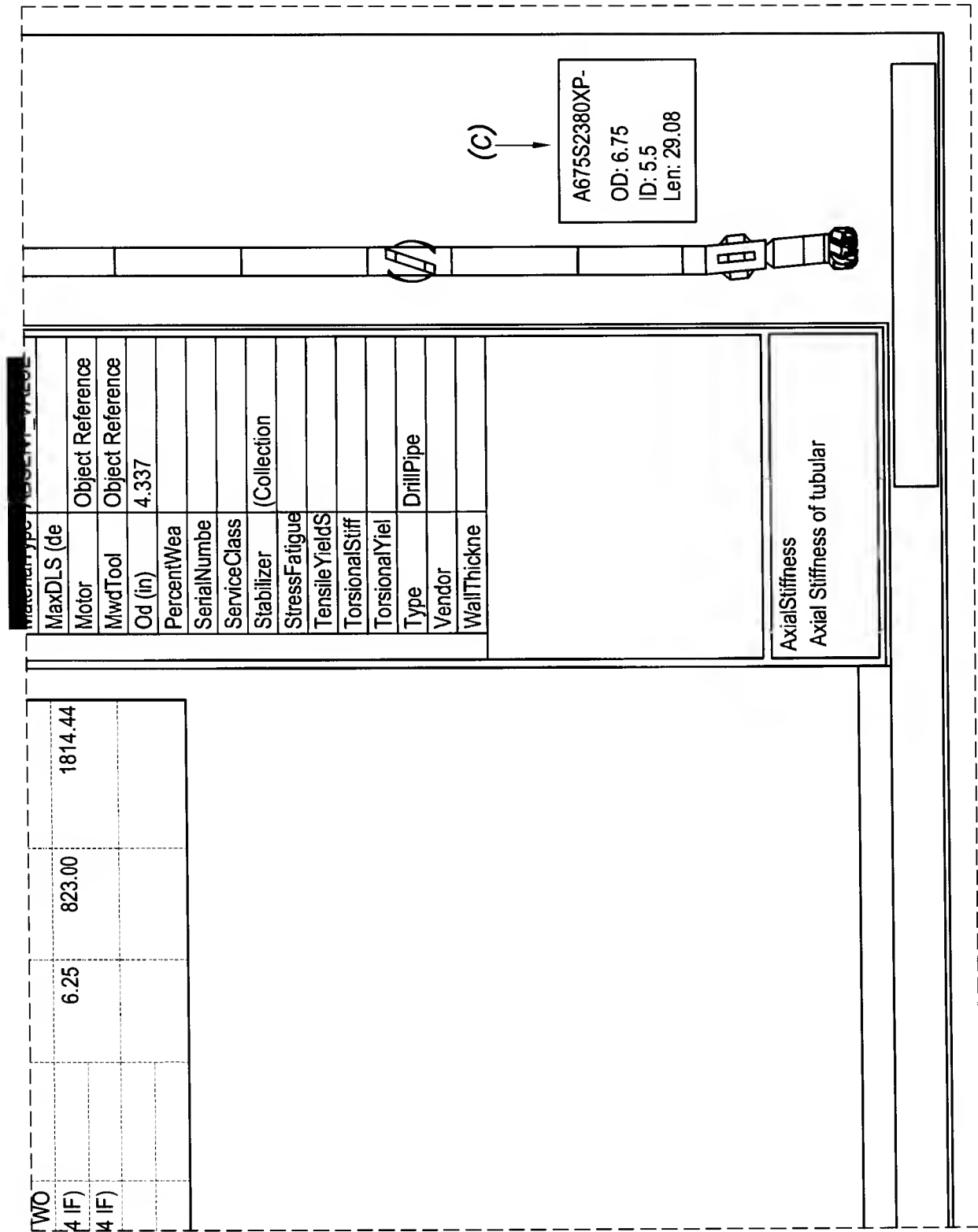
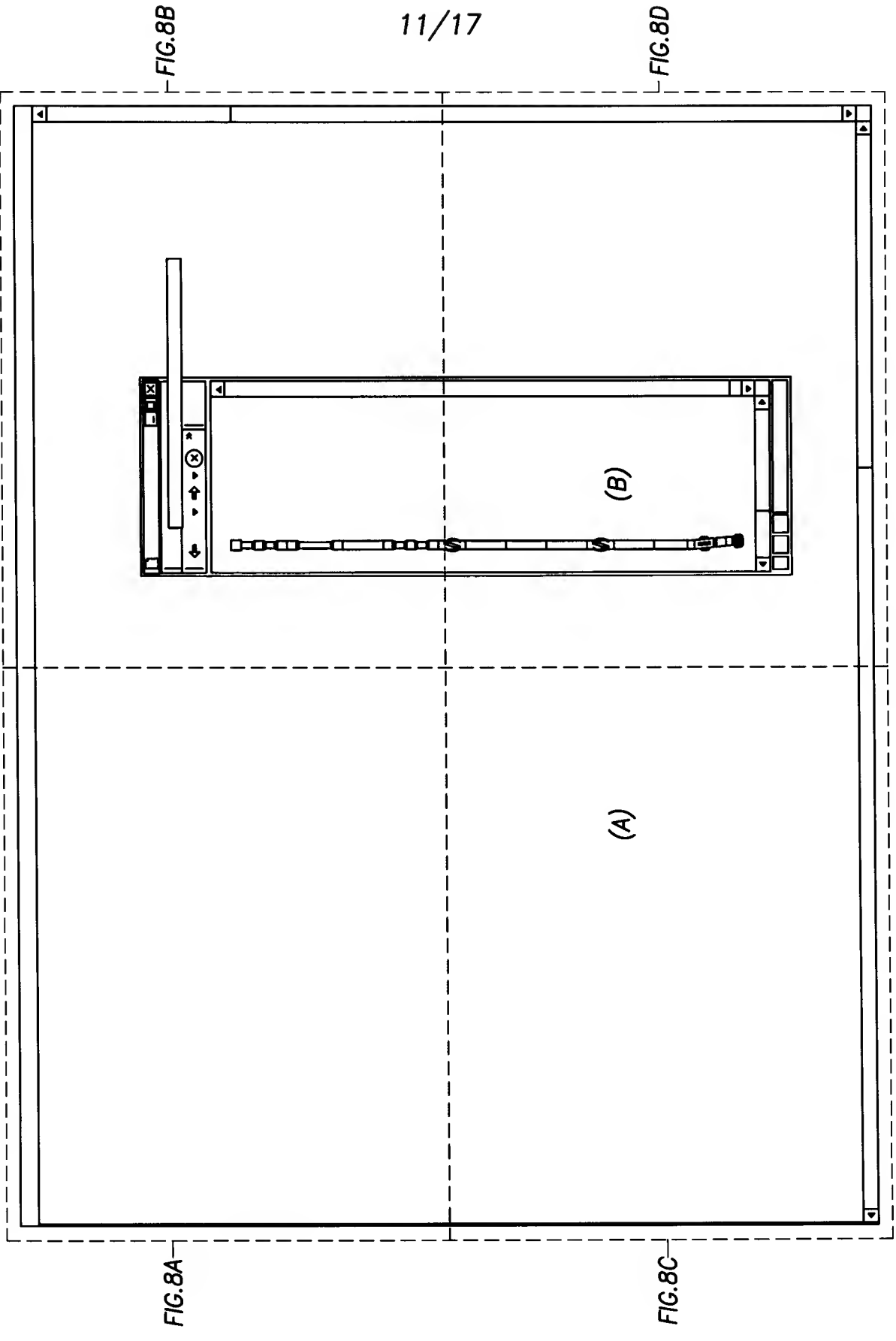


FIG. 7A

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```

File Edit Format Help
<?xml version="1.0" encoding="utf-8"?>
<tubulars xsi:schemaLocation="http://www.witsml.org/schemas/120 http://www.witsml.
<tubular uidwell="34434" uidwellbore="2345" uidTubularAssy="45454" uidsource="">
  <namewell>Flash Well 1</namewell>
  nameWellbore>Flash Test</nameWellbore>
  nameTubularAssy>Bha 1</nameTubularAssy>
  <typeTubularAssy>DirectionalDrilling</typeTubularAssy>
  <valveFloat>>false</valveFloat>
  <sourceNuclear>>false</sourceNuclear>
  <tubularComponent>
    <typeTubularComp>BitPDCFixedCutter</typeTubularComp>
    <description>9 7/8" Bit</description>
    <id uom="in">3.25</id>
    <od uom="in">7.5</od>
    <len uom="ft">1.16</len>
    <wtPerLen uom="lbm/ft">122.89</wtPerLen>
    <odDrift uom="in">9.87500000000001</odDrift>
    <vendor>Generic</vendor>
    <bitRecord>
      <diaBit uom="in">9.87200000000001</diaBit>
      <typeBit>RollerCone</typeBit>
    </bitRecord>
    <connection>
      <typeThread>Reg</typeThread>
      <sizeThread uom="in">6.625</sizeThread>
      <tqMakeup uom="ft.lbf">23601.9887768725</tqMakeup>
    </connection>
  </tubularComponent>
  <tubularComponent>
    <typeTubularComp>Motot</typeTubularComp>
    <description>A675S2380XP-AIM</description>
    <id uom="in">5.5</id>
    <od uom="in">6.75</od>
    <len uom="ft">29.08</len>
    <wtPerLen uom="lbm/ft">78.09999999999999</wtPerLen>
    <odDrift uom="in">7.5</odDrift>

```

FIG.8A

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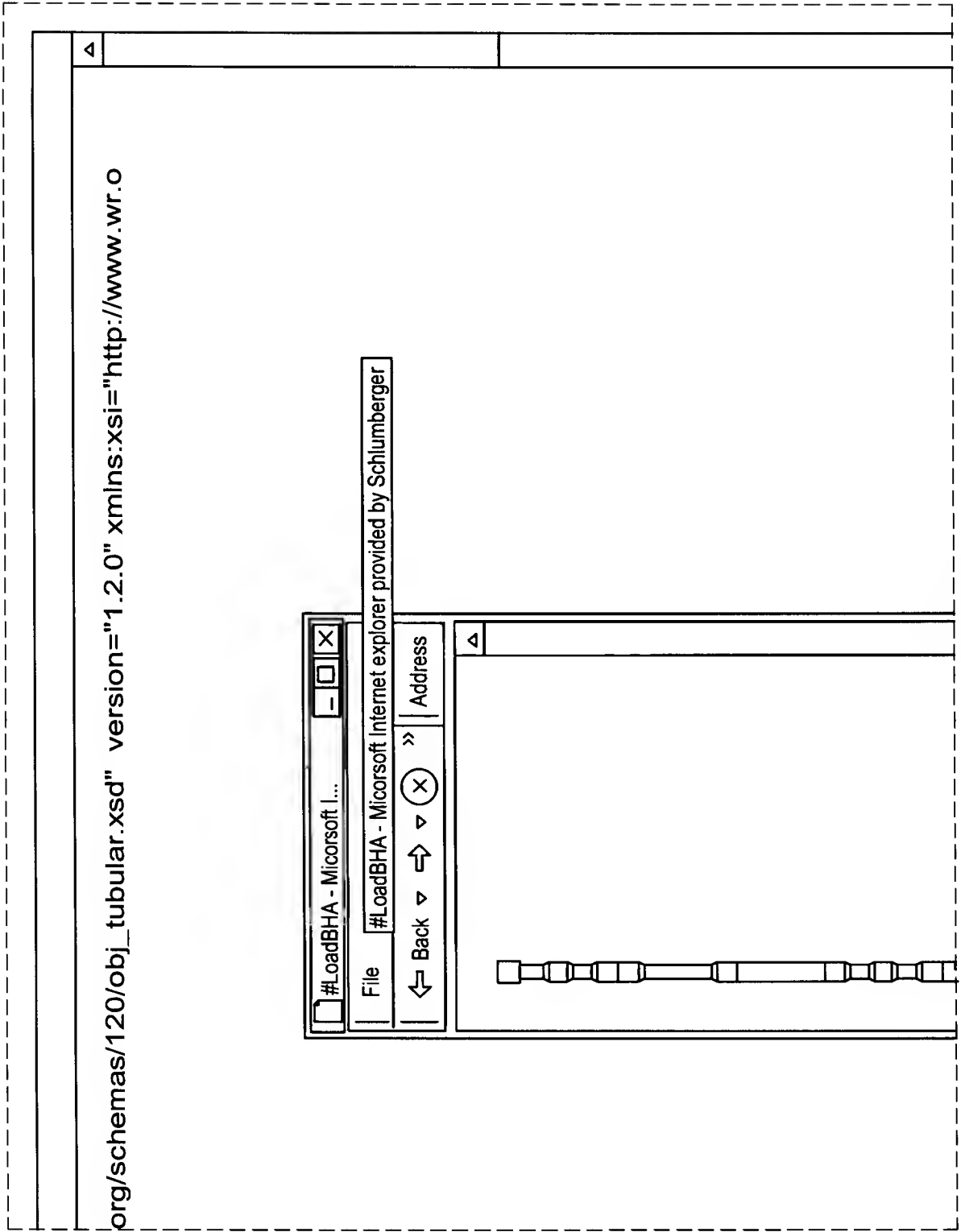


FIG.8B

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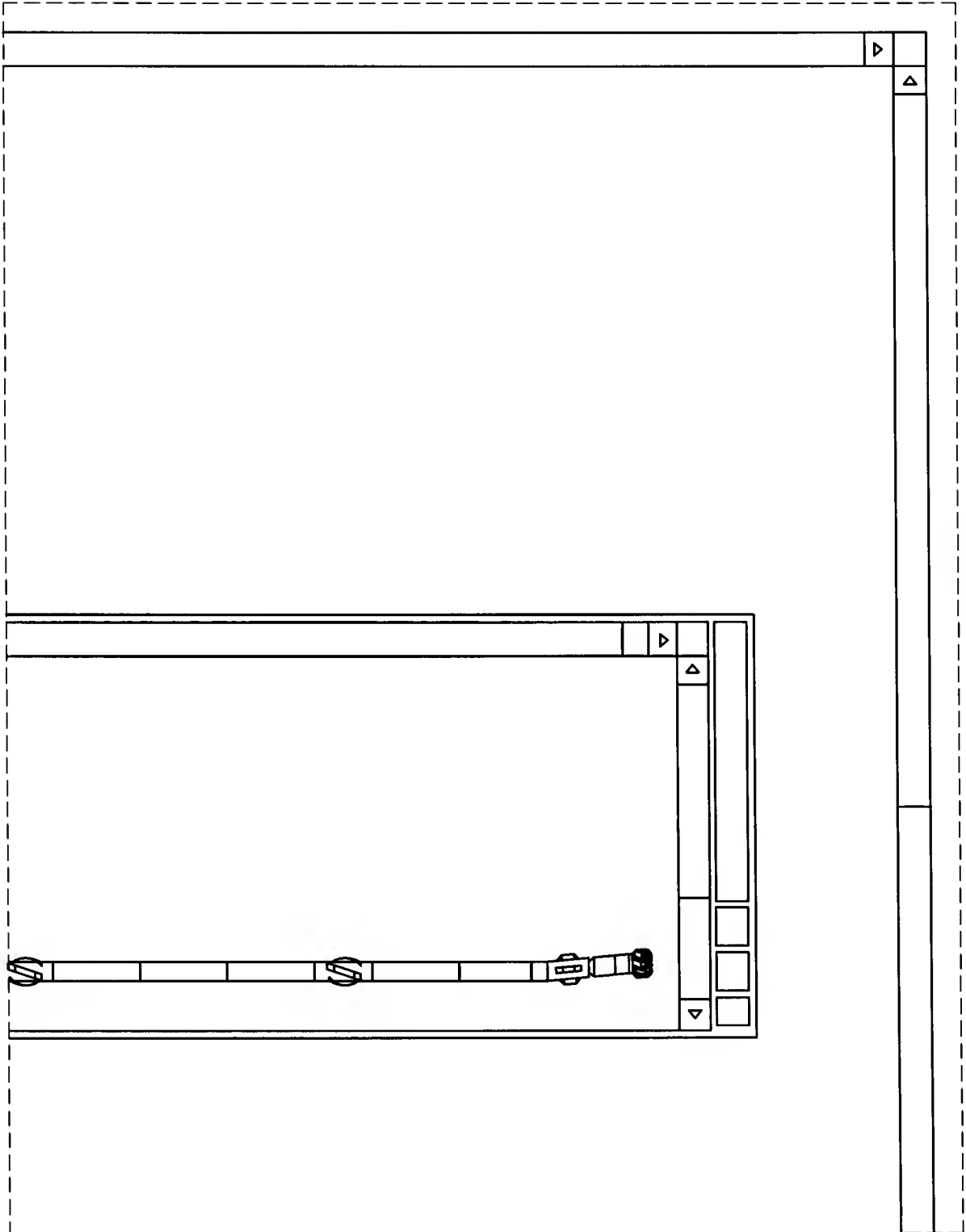
```

<cfgConn>PinBox</cfgConn>
<vendor>Schlumberger</vendor>
<connection>
  <typeThread>Reg</typeThread>
  <sizeThread uom="in">4.5</sizeThread>
  tqMakeup uom="ft. lbf">10325.8700898817</tqMakeup>
</connection>
<connection>
  <typeThread>Reg</typeThread>
  <sizeThread uom="in">4.5</sizeThread>
  <tqMakeup uom="ft. lbf">10325.8700898817</tqMakeup>
</connection>
<motor>
  <flowrateMn uom="bbl/d">300</flowrateMn>
  <flowrateMx uom="bbl/d">600</flowrateMx>
  <lobesRotor>2</lobesRotor>
  <lobesStator>3</lobesStator>
  <rotorCatcher>false</rotorCatcher>
  <dumpValve>false</dumpValve>
  <rotatable>false</rotatable>
</motor>
<stabilizer>
  <lenBlade uom="ft">1.17</lenBlade>
  <odBladeMx uom="in">8.37500000000001</odBladeMx>
  <distBladeBot uom="ft">1.23</distBladeBot>
</stabilizer>
<bend>
  <distBendBot uom="ft">8.59999999999999</distBendBot>
</bend>
</tubularComponent>
<tubularcomponent>
  <typeTubularCom>MWDPulser</typeTubularComp>
  <description>MWD</description>
  <id uom="in">3</id>
  <od uom="in">6.75</od>
  <len uom="ft">36</len>

```

FIG.8C

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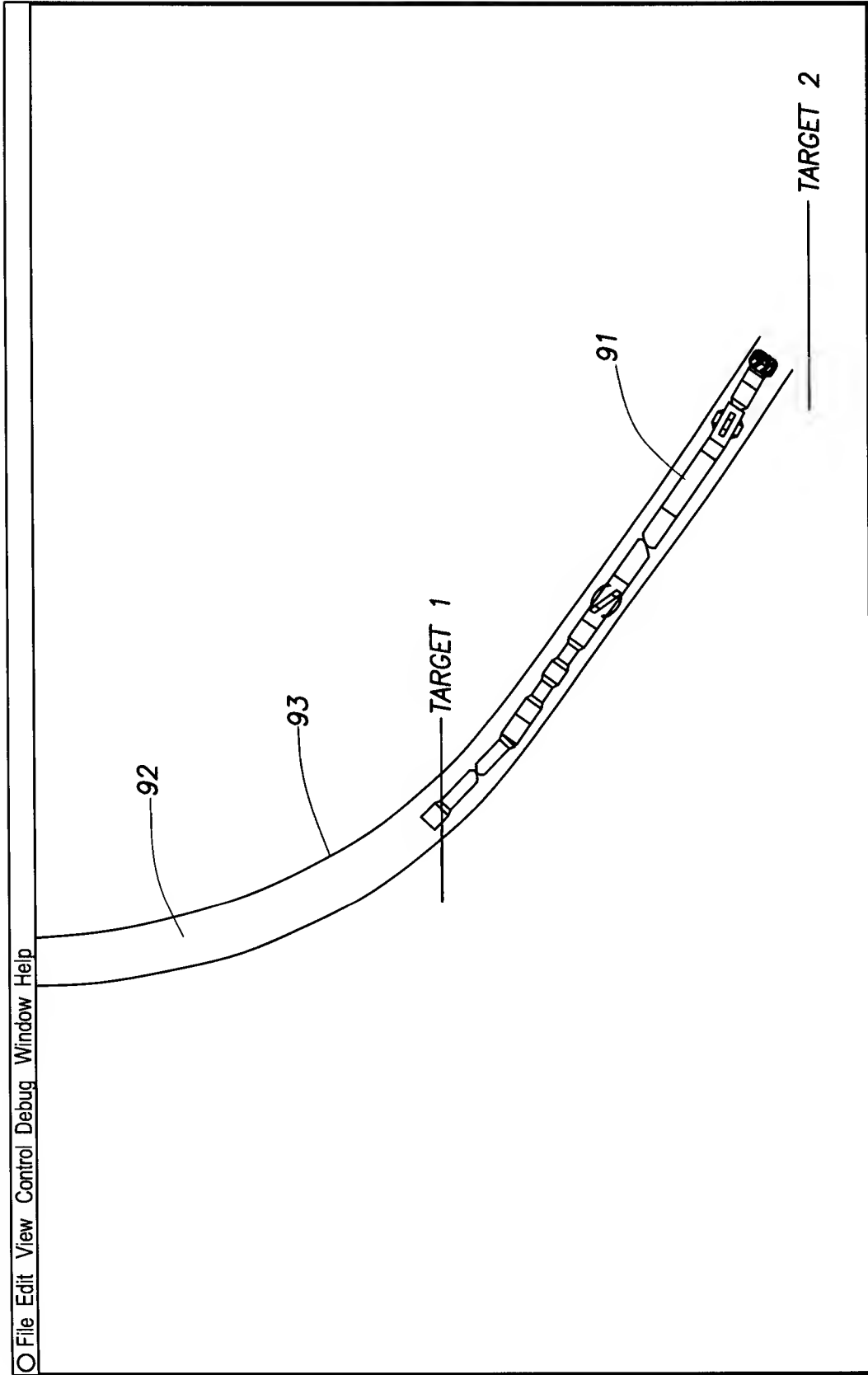


FIG.9

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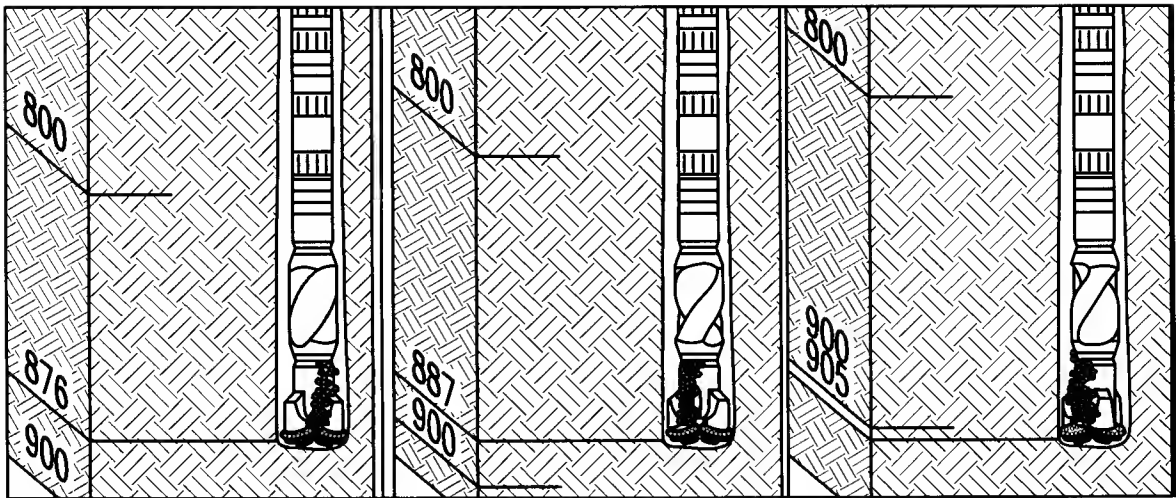


FIG. 10

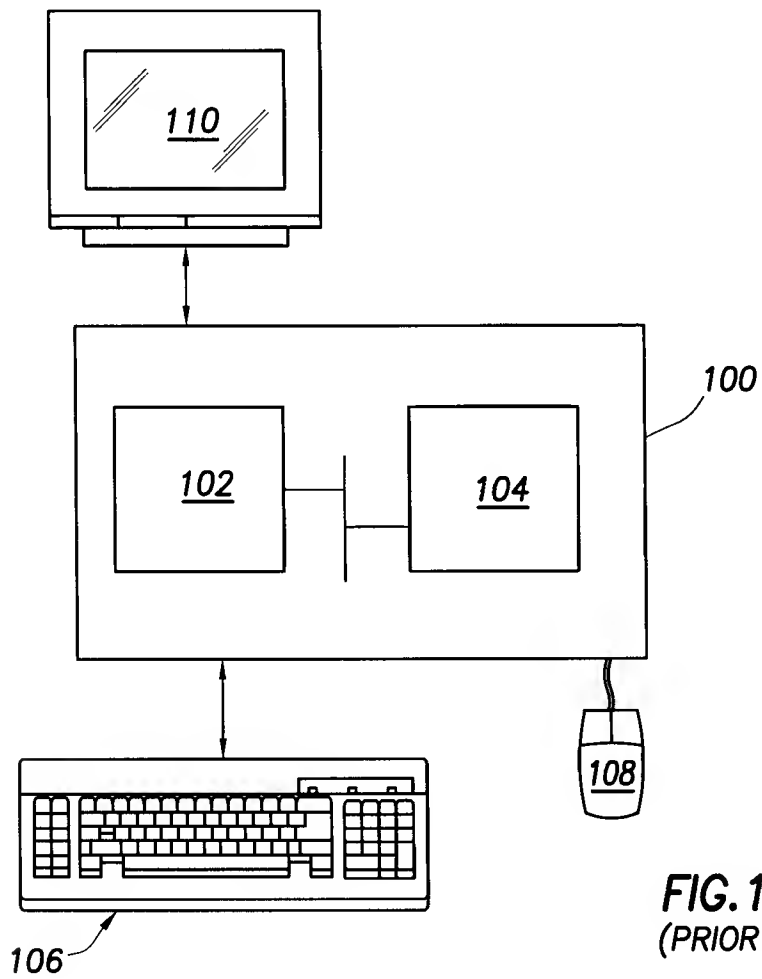


FIG. 11  
(PRIOR ART)

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